Multiplicative Ideal Theory. By R. W. Gilmer. Queen's Paper on Pure and Applied Mathematics No. 12. Queen's Univ., Kingston, Ontario (1968). vii+700 pp.

This book is divided into six lengthy chapters and five appendices. The chapters are: I. Some basic concepts; II. Integral extensions of rings; III. Valuation theory; IV. Prüfer domains; V. Some questions concerning polynomial rings and; VI. Domains of classical ideal theory. Additional information which does not fit conveniently into any of the chapters is included in the appendices. The six chapters are subdivided into thirty-six sections each of which is preceded by a list of terms which are defined in the section and a list of references. At the end of each section are remarks about the literature. The book ends with a very extensive bibliography of articles which have appeared since Krull's book in 1934, rather inconveniently arranged by year of publication. There is also a list of books.

The first three chapters are introductory in nature and overlap considerably with older texts; however, these chapters contain many novelties and some recent results not in the older books. Chapter IV is an extensive treatment of Prüfer domains including their ideal theory, arithmetic, overings and polynomial rings. The next is about dimension theory (the usual and also "valuative" dimension) and about polynomial rings and rings of rational functions. The final chapter is about almost Dedekind and Dedekind domains and their class groups.

Although the author does not claim to have written an encyclopedia of commutative domains, and, in fact, there are no results of a geometric character nor any proofs involving homological methods, there is a vast amount of information in these two volumes. Chapters IV, V and VI are rich in interesting results and many are due to the author. The reviewer found the chapter on Prüfer domains particularly interesting and clear. Throughout proofs are given in considerable detail and this is, generally, a pleasant feature.

The book seems to be intended as a source book of information for researchers and, as such, it would appear to be successful. The extensiveness of the bibliography enhances its usefulness. Unfortunately there is no index but the lists of terms preceding the sections help.

The author suggests as prerequisites the usual undergraduate algebra and the first four chapters of Zariski and Samuel's *Commutative Algebra*. Before tackling the book, however, the reader should be warned that there are important prerequisites not mentioned above, that is, the reader must be equipped with an interest in the subject, some knowledge of its origin and history and a stock of elementary examples; for the book contains none of the basic examples and very little motivation. For this reason and because there are no exercises, this book would probably be unsuitable as a text for classroom use. The book suffers from a few of the usual faults of the multilith process—an occasional symbol omitted or illegible and, in my copy, page 333 seems to have been printed with disappearing ink.

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